

SEQUENCE LISTING

<110> Takara Shuzo Co., Ltd.

5 <120> A method for amplification of nucleic acids

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<150> JP 11-076966

10 <151> 1999-03-19

<150> JP 11-370035

<151> 1999-12-27

15 <150> JP 2000-251981

<151> 2000-08-23

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25 <151> 2001-04-03

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<151> 2000-03-14

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10 <213> Artificial Sequence

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<223> Synthetic DNA corresponding to a portion of human transferrin
receptor-encoding sequence used as a template

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ccttgcatat tctgagcagt ttctttctgt ttttgcgag 99

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25 <220>

<223> Designed oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence

<400> 2

5 cagcaactgg gccagcaaag tt

22

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10 <213> Artificial Sequence

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<223> Designed oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence

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gcaaaaacag aaagaaactg ct

22

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human transferrin receptor-encoding sequence. "nucleotide 21 is ribonucleotide-other nucleotides are deoxyribonucleotides"

<400> 4

5 cagcaactgg gccagcaaag ut

22

<210> 5

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<223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotide 21 is ribonucleotide-other nucleotides are deoxyribonucleotides"

<400> 5

gcaaaaacag aaagaaactg ct

22

20 <210> 6

<211> 22

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25 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotide 22 is ribonucleotide-other nucleotides are deoxyribonucleotides"

5 <400> 6

cagcaactgg gccagcaaag tu

22

<210> 7

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15 <223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotide 22 is ribonucleotide-other nucleotides are deoxyribonucleotides"

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gcaaaaacag aaagaaactg cu

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<211> 22

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<223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotides 21 to 22 are ribonucleotides-other nucleotides are deoxyribonucleotides"

5

<400> 8

cagcaactgg gccagcaaag uu

22

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<211> 22

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<223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotides 21 to 22 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 9

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gcaaaaacag aaagaaactg cu

22

<210> 10

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<400> 10

cagcaactgg gccagcaaag tt

22

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15 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotides 19 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

20 <400> 11

gcaaaaacag aaagaaacug ct

22

<210> 12

<211> 26

25 <212> DNA

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<223> Designed oligonucleotide used as a probe for detecting an
5 amplified portion of human transferrin receptor-encoding sequence

<400> 12

tgctttccct ttccttgcat attctg

26

10 <210> 13

<211> 25

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15 <220>

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upper(2)NN to amplify a portion of plasmid pUC19. "nucleotides 24 to
25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

20 <400> 13

attgcttaat cagtgaggca cctau

25

<210> 14

<211> 25

25 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer designated as pUC19

5 lower NN to amplify a portion of plasmid pUC19. "nucleotides 24 to 25
are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 14

gataacactg cggccaactt actuc

25

<210> 15

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
plasmid pUC19. "nucleotides 24 to 25 are ribonucleotides-other
nucleotides are deoxyribonucleotides"

<400> 15

actggcgaac tacttactct agcuu

25

<210> 16

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed chimeric oligonucleotide primer designated as pUC19
lower 542 to amplify a portion of plasmid pUC19. "nucleotides 24 to 25
are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 16

10 agtcaccagaa aagcatctta cggau 25

<210> 17

<211> 25

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
plasmid pUC19. "nucleotides 24 to 25 are ribonucleotides-other
20 nucleotides are deoxyribonucleotides"

<400> 17

gctcatgaga caataaccct gataa 25

25 <210> 18

<211> 25

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed oligonucleotide primer designated as pUC19 upper 150 to amplify a portion of plasmid pUC19. "nucleotides 23 to 25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

10 <400> 18

ggtgtcacgc tcgtcgtttg gtaug

25

<210> 19

<211> 25

15 <212> DNA

<213> Artificial Sequence

<220>

20 <223> Designed chimeric oligonucleotide primer designated as pUC19 lower NN to amplify a portion of plasmid pUC19. "nucleotides 23 to 25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 19

gataacactg cggccaactt acuuc

25

25

<210> 20

<211> 25

<212> DNA

<213> Artificial Sequence

5

<220>

<223> Designed chimeric oligonucleotide primer designated as pUC19 upper 249 to amplify a portion of plasmid pUC19. "nucleotides 23 to 25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

10

<400> 20

cgcctccatc cagtctatta atugu

25

<210> 21

15

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

20

<223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotides 20 to 22 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 21

25

ctgattgaga ggattcctga gu

22

<210> 22

<211> 22

<212> DNA

5 <213> Artificial Sequence

<220>

10 <223> Designed chimeric oligonucleotide primer to amplify a portion of
human transferrin receptor-encoding sequence. "nucleotides 21 to 22
are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 22

tagggagaga ggaagtgata cu

22

15 <210> 23

<211> 25

<212> DNA

<213> Artificial Sequence

20 <220>

<223> Designed chimeric oligonucleotide primer designated as pUC19
upper(2)NN to amplify a portion of plasmid pUC19. "nucleotides 24 to
25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

25 <400> 23

attgcttaat cagtgaggca cctau

25

<210> 24

<211> 25

5 <212> DNA

<213> Artificial Sequence

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10 <223> Designed chimeric oligonucleotide primer designated as pUC19
upper(2)NN to amplify a portion of plasmid pUC19. "nucleotides 24 to
25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 24

attgcttaat cagtgaggca cctaa

25

15

<210> 25

<211> 25

<212> DNA

<213> Artificial Sequence

20

<220>

<223> Designed chimeric oligonucleotide primer designated as pUC19
upper(2)NN to amplify a portion of plasmid pUC19. "nucleotides 24 to
25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

25

<400> 25

attgcttaat cagtgaggca cctac

25

<210> 26

5 <211> 25

<212> DNA

<213> Artificial Sequence

<220>

10 <223> Designed chimeric oligonucleotide primer designated as pUC19 upper(2)NN to amplify a portion of plasmid pUC19. "nucleotides 24 to 25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 26

15 attgcttaat cagtgaggca cctag

25

<210> 27

<211> 22

<212> DNA

20 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotides 21 to 22 are ribonucleotides-other nucleotides are deoxyribonucleotides"

25

<400> 27

ctgattgaga ggattcctga gu

22

5 <210> 28

<211> 22

<212> DNA

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15 <400> 28

tagggagaga ggaagtgata cu

22

<210> 29

<211> 24

20 <212> DNA

<213> Artificial Sequence

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<223> Designed chimeric oligonucleotide primer designated as MF2N3(24)
25 to amplify a portion of plasmid pUC19-249 or plasmid pUC19-911.

"nucleotides 22 to 24 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 29

5 gctgcaaggc gattaagttg ggua

24

<210> 30

<211> 24

<212> DNA

10 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as MR1N3(24) to amplify a portion of plasmid pUC19-249 or plasmid pUC19-911.

15 "nucleotides 22 to 24 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 30

ctttatgctt ccggctcgta tguu

24

20

<210> 31

<211> 25

<212> DNA

<213> Artificial Sequence

25

<220>

<223> Designed chimeric oligonucleotide primer designated as pUC19 upper 249 to amplify a portion of plasmid pUC19. "nucleotides 24 to 25 are ribonucleotides-other nucleotides are deoxyribonucleotides"

5

<400> 31

cgcctccatc cagtctatta attgu

25

<210> 32

10

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

15

<223> Designed oligonucleotide primer designated as pUC19 upper 150 to amplify a portion of plasmid pUC19

<400> 32

ggtgtcacgc tcgtcgtttg gtatg

25

20

<210> 33

<211> 25

<212> DNA

<213> Artificial Sequence

25

<220>

<223> Designed oligonucleotide primer designated as pUC19 upper 249 to
amplify a portion of plasmid pUC19

5 <400> 33

cgctccatc cagtctatta attgt

25

<210> 34

<211> 25

10 <212> DNA

<213> Artificial Sequence

<220>

15 <223> Designed oligonucleotide primer designated as pUC19 lower NN to
amplify a portion of plasmid pUC19

<400> 34

gataacactg cggccaactt acttc

25

20 <210> 35

<211> 30

<212> DNA

<213> Artificial Sequence

25 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of plasmid pUC19. "nucleotides 28 to 30 are ribonucleotides-other nucleotides are deoxyribonucleotides"

5 <400> 35

ggatgtgctg caaggcgatt aagttgggua 30

<210> 36

<211> 30

10 <212> DNA

<213> Artificial Sequence

<220>

15 <223> Designed chimeric oligonucleotide primer designated as MR1N3 to amplify a portion of plasmid pUC19. "nucleotides 28 to 30 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 36

tttacacttt atgcttccgg ctcgtatguu 30

20

<210> 37

<211> 30

<212> DNA

<213> Artificial Sequence

25

<220>

<223> Designed oligonucleotide primer to amplify a portion of plasmid pUC19

5 <400> 37

ggatgtgctg caaggcgatt aagttgggta 30

<210> 38

<211> 30

10 <212> DNA

<213> Artificial Sequence

<220>

15 <223> Designed oligonucleotide primer designated as MR1N3 to amplify a portion of plasmid pUC19

<400> 38

tttacacttt atgcttcgg ctcgtatgtt 30

20 <210> 39

<211> 30

<212> RNA

<213> Artificial Sequence

25 <220>

<400> 39

<210> 40

<212> DNA

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<400> 40

20 <210> 41

<211> 30

<212> DNA

<213> Artificial Sequence

25 <220>

<223> Designed chimeric oligonucleotide primer designated as MR1N3 to amplify a portion of plasmid pUC19. "nucleotides 28 to 30 are ribonucleotides-other nucleotides are deoxyribonucleotides"

5 <400> 41

tttacacttt atgcttccgg ctcgtatguu

30

<210> 42

<211> 17

10 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as M13M4

15

<400> 42

gttttcccag tcacgac

17

<210> 43

20 <211> 18

<212> DNA

<213> Artificial Sequence

<220>

25 <223> Designed chimeric oligonucleotide primer to amplify a portion of

vero toxin 1-encoding sequence from hemorrhagic Escherichia coli 0-157. "nucleotides 16 to 18 are ribonucleotides-other nucleotides are deoxyribonucleotides"

5 <400> 43

agttaatgtg gtggcgaa

18

<210> 44

<211> 17

10 <212> DNA

<213> Artificial Sequence

<220>

15 <223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 1-encoding sequence from hemorrhagic Escherichia coli 0-157. "nucleotides 15 to 17 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 44

20 gactcttcca tctgcca

17

<210> 45

<211> 18

<212> DNA

25 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-
5 157. "nucleotides 16 to 18 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

<400> 45

ttcggatatcc tattcccg 18

<210> 46

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-
20 157. "nucleotides 16 to 18 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

<400> 46

tctctgggtca ttgtauua 18

25 <210> 47

<211> 22

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed oligonucleotide primer designated as MCR-F to amplify a
long DNA fragment

<400> 47

10 ccattcaggc tgcgcaactg tt

22

<210> 48

<211> 22

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as MCR-R to amplify a
long DNA fragment

20

<400> 48

tggcagcaca ggtttcccga ct

22

<210> 49

25 <211> 24

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed chimeric oligonucleotide primer designated as MF2N3(24)
to amplify a long DNA fragment. "nucleotides 22 to 24 are
ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 49

10 gctgcaaggc gattaagttg ggua 24

<210> 50

<211> 24

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer designated as MR1N3(24)
to amplify a long DNA fragment. "nucleotides 22 to 24 are
20 ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 50

ctttatgctt ccgctcgta tguu 24

25 <210> 51

<211> 20

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

<400> 51

10 aacaacaaga aactggtttc

20

<210> 52

<211> 20

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

20

<400> 52

gcaatgcatg acgactgggg

20

<210> 53

25 <211> 17

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed chimeric oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA. "nucleotides 16 to 17 are ribonucleotides-
other nucleotides are deoxyribonucleotides"

<400> 53

10 gttttcccag tcacgac

17

<210> 54

<211> 17

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA. "nucleotides 16 to 17 are ribonucleotides-
20 other nucleotides are deoxyribonucleotides"

<400> 54

caggaaacag ctatgac

17

25 <210> 55

<211> 20

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

<400> 55

10 gtacgggtcat catctgacac

20

<210> 56

<211> 20

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

20

<400> 56

gcaatcggca tgttaaacgc

20

<210> 57

25 <211> 20

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

<400> 57

cgccatcctg ggaagactcc

20

<210> 58

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as R1-S1 to amplify a
portion of bacteriophage lambda DNA

<400> 58

tttcacacag gaaacagcta tgacaacaac aagaaactgg tttc

44

<210> 59

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as R1-A3 to amplify a
5 portion of bacteriophage lambda DNA

<400> 59

tttcacacag gaaacagcta tgacgcaatg catgacgact gggg

44

10 <210> 60

<211> 62

<212> DNA

<213> Artificial Sequence

15 <220>

<223> Designed oligonucleotide primer designated as R2-S1 to amplify a
portion of bacteriophage lambda DNA

<400> 60

20 attgtgagcg gataacaatt tcacacagga aacagctatg acaacaaca gaaactggtt 60
tc

62

<210> 61

<211> 62

25 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as R2-A3 to amplify a
5 portion of bacteriophage lambda DNA

<400> 61

attgtgagcg gataacaatt tcacacagga aacagctatg acgcaatgca tgacgactgg 60
gg 62

10

<210> 62

<211> 95

<212> DNA

<213> Artificial Sequence

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<223> Designed oligonucleotide primer designated as R3-S1 to amplify a
portion of bacteriophage lambda DNA

20

<400> 62

cactttatgc ttccggctcg tatgttgtgt ggaattgtga gcggataaca atttcacaca 60
ggaaacagct atgacaacaa caagaaactg gtttc 95

<210> 63

25

<211> 95

<212> DNA

<213> Artificial Sequence

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5 <223> Designed oligonucleotide primer designated as R3-A3 to amplify a portion of bacteriophage lambda DNA

<400> 63

cactttatgc ttccggctcg tatgttgtgt ggaattgtga gcggataaca atttcacaca 60
 10 ggaaacagct atgacgcaat gcatgacgac tgggg 95

<210> 64

<211> 17

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer designated as M13RV-2N 17mer. "nucleotides 16 to 17 are ribonucleotides-other nucleotides are
 20 deoxyribonucleotides"

<400> 64

caggaaacag ctatgac 17

25 <210> 65

<211> 20

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed chimeric oligonucleotide primer designated as M13RV-2N
20mer. "nucleotides 19 to 20 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

10 <400> 65

acacaggaaa cagctatgac

20

<210> 66

<211> 70

15 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of CDC2-
20 related protein kinase PISSLRE gene

<400> 66

gagttcgtgt ccgtacaact atttcacaca ggaaacagct atgacccaac aagagcctat 60

agcttcgctc

70

25

<210> 67

<211> 44

<212> DNA

<213> Artificial Sequence

5

<220>

<223> Designed oligonucleotide primer to amplify a portion of CDC2-related protein kinase PISSLRE gene

10

<400> 67

tcgaaatcag ccacagcgcc atttcacaca ggaaacagct atgacccgct gtctttgagt 60

tgtggtg

67

<210> 68

15

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

20

<223> Designed oligonucleotide primer to amplify a portion of Type II cytoskeletal 11 keratin gene

<400> 68

gagttcgtgt ccgtacaact atttcacaca ggaaacagct atgacgctat tctgacatca 60

25

ctttccagac

70

<210> 69

<211> 44

<212> DNA

5 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of Type II
cytoskeletal 11 keratin gene

10

<400> 69

tcgaaatcag ccacagcgcc atttcacaca ggaaacagct atgacgaatt ccactggtgg 60
cagtag 66

15

<210> 70

<211> 62

<212> DNA

<213> Artificial Sequence

20

<220>

<223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

<400> 70

25

attgtgagcg gataacaatt tcacacagga aacagctatg acgtacggtc atcatctgac 60

ac

62

<210> 71

<211> 62

5 <212> DNA

<213> Artificial Sequence

<220>

10 <223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

<400> 71

attgtgagcg gataacaatt tcacacagga aacagctatg acatgcgccg cctgaaccac 60
ca 62

15

<210> 72

<211> 62

<212> DNA

<213> Artificial Sequence

20

<220>

<223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

25 <400> 72

T330-333333

attgtgagcg gataacaatt tcacacagga aacagctatg acctgctctg ccgcttcacg 60
ca 62

<210> 73

5 <211> 62

<212> DNA

<213> Artificial Sequence

<220>

10 <223> Designed oligonucleotide primer to amplify a portion of
bacteriophage lambda DNA

<400> 73

attgtgagcg gataacaatt tcacacagga aacagctatg acgcaatcgg catgttaaac 60
15 gg 62

<210> 74

<211> 24

<212> DNA

20 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as MF2N3(24) to
amplify a portion of plasmid pUC19-249 or plasmid pUC19-911

24

5 $\langle 211 \rangle$ 24

<213> Artificial Sequence

10 <223> Designed oligonucleotide primer designated as MR1N3(24) to
amplify a portion of plasmid pUC19-249 or plasmid pUC19-911

24

<211> 20

<213> Artificial Sequence

<223> Designed chimeric oligonucleotide primer designated as M13M4-3N 20mer. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 76

agggttttcc cagtcacgac

20

<210> 77

5 <211> 20

<212> DNA

<213> Artificial Sequence

<220>

10 <223> Designed chimeric oligonucleotide primer designated as M13RV-3N
20mer. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

<400> 77

15 acacaggaaa cagctatgac

20

<210> 78

<211> 24

<212> DNA

20 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer designated as M13M4-3N
24mer. "nucleotides 22 to 24 are ribonucleotides-other nucleotides are
25 deoxyribonucleotides"

24

24

<213> Artificial Sequence

"nucleotides 22 to 24 are ribonucleotides-other nucleotides are deoxyribonucleotides"

24

<213> Artificial Sequence

25 <223> Designed oligonucleotide primer designated as 5' ID to amplify a
portion of cyclin A DNA

tcgaaatcag ccacagcgcc atttcacaca ggaaacagct atgacatgtt ttgggagaa 60
ttaagtctga 70

5

<211> 44

<212> DNA

<213> Artificial Sequence

10

 $\langle 220 \rangle$

<223> Designed oligonucleotide primer designated as 3' ID to amplify a portion of cyclin A DNA

15

<400> 81

gagttcgtgc cgtacaacta tttcacacag gaaacagcta tgacttacag atttagtgtc 60
tctggtggg 69

<210> 82

20

<211> 16

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

25

<223> Designed oligonucleotide primer designated as M13RV-2N 16mer.

"nucleotides 15 to 16 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 82

5 aggaaacagc tatgac

16

<210> 83

<211> 27

<212> DNA

10 <213> Artificial Sequence

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<223> Designed chimeric oligonucleotide primer to amplify a portion of human transferrin receptor-encoding sequence. "nucleotides 21 to 22 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 83

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25 <210> 96

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25 $\langle 211 \rangle$ 20

<212> DNA

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5 <223> PCR primer BsuII-6 for cloning a gene encoding a polypeptide
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<400> 98

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5 having a RNaseHII activity from Bacillus caldotenax

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15 <220>

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<210> 102

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25 <213> Artificial Sequence

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10 <211> 39

<212> DNA

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<211> 780

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<213> Bacillus caldotenax

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 tttgaaaggc agaaagcgcg ccggcacgcc atcgagcagc ggtgggaaga actaatgcgt 180
 5 tatgagaggg aactatacgc cgctggcggt agacggatcg ccggcattga tgaggccggg 240
 cgcggcccg c tggccggccc ggtcgtcgcc gccgcggtca tcttgccgaa agacgcctat 300
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 gtgacgcgcg accggtggat gaaagaactg gatcgccgct atccacaata cgggttcgcg 660
 cgccatatgg gctacggaac gccggaacat ttcgaggcga tccgccgcta cggcgttacg 720
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<213> *Bucillus caldotenax*

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Met Lys Arg Tyr Thr Val Lys Asp Ile Glu Ala Leu Leu Pro Lys

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Leu Gly Ala Asp Asp Pro Arg Trp Glu Met Leu Arg Gln Asp Glu

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Arg Lys Ser Val Gln Ala Leu Leu Ala Arg Phe Glu Arg Gln Lys
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 Ala Arg Arg His Ala Ile Glu Gln Arg Trp Glu Glu Leu Met Arg
 50 55 60
 5 Tyr Glu Arg Glu Leu Tyr Ala Ala Gly Val Arg Arg Ile Ala Gly
 65 70 75
 Ile Asp Glu Ala Gly Arg Gly Pro Leu Ala Gly Pro Val Val Ala
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 Ala Ala Val Ile Leu Pro Lys Asp Ala Tyr Leu Pro Gly Leu Asp
 10 95 100 105
 Asp Ser Lys Arg Leu Thr Pro Glu Lys Arg Glu Ala Leu Phe Ala
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 Gln Ile Glu Ala Cys Ala Val Ala Ile Gly Ile Gly Ile Val Ser
 125 130 135
 15 Ala Ala Glu Ile Asp Glu Arg Asn Ile Tyr Glu Ala Thr Arg Gln
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 Ala Met Ala Lys Ala Val Asn Ala Leu Ser Pro Pro Pro Glu His
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 Leu Leu Val Asp Ala Met Ala Val Pro Cys Pro Leu Pro Gln Gln
 20 170 175 180
 Arg Leu Ile Lys Gly Asp Ala Asn Ser Ala Ser Ile Ala Ala Ala
 185 190 195
 Ser Val Ile Ala Lys Val Thr Arg Asp Arg Trp Met Lys Glu Leu
 200 205 210
 25 Asp Arg Arg Tyr Pro Gln Tyr Gly Phe Ala Arg His Met Gly Tyr

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<210> 107

<211> 20

<212> DNA

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<210> 108

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10 <212> DNA

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<223> PCR primer BsuIII-6 for cloning a gene encoding a polypeptide having a RNaseHIII activity from Bacillus caldotenax

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20 <210> 109

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20 $\langle 211 \rangle$ 20

<213> Artificial Sequence

25 <223> PCR primer BcaRNIII-3 for cloning a gene encoding a polypeptide

having a RNaseHIII activity from *Bacillus caldotenax*

<400> 111

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<213> *Bucillus caldotenax*

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gcctaccgct caggcaaagt gctgtttcaa gggaaagcgg cggagcaaga agcagcgaaa 180

15 tggatatcag gggcgagcgc ctcaaacgaa acagctgacc accagccgtc cgctttggca 240

gctcatcaac tcgggtctct ttcgccatc ggttcgatg aagtcggcac cggcgattat 300

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20 tggcagcgaa gcggcatgcc gcagacgaaa atgaaagcgc tccttcacaa ccggacgctc 540

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gtgcactgcc ttcccaaggc ggaaagtgtc cacgtatcag tcgcccgcgc ctgatcatc 720

gcccgtatg tgtttttaga ggagatggag caattatccc gcgcgctcgg cctcctgctt 780

25 ccaaaaggcg ccggcgccat tgcgatgaa gccgcggcca acatcatccg cgcgcggggg 840

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<210> 113

5 <211> 305

<212> PRT

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<400> 113

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1 5 10 15

Tyr Gln Asp Ala Leu Ser Asp Arg Leu Pro Ala Gly Ala Leu Phe

20 25 30

Ala Val Lys Arg Pro Asp Val Val Ile Thr Ala Tyr Arg Ser Gly

15 35 40 45

Lys Val Leu Phe Gln Gly Lys Ala Ala Glu Gln Glu Ala Ala Lys

50 55 60

Trp Ile Ser Gly Ala Ser Ala Ser Asn Glu Thr Ala Asp His Gln

65 70 75

20 Pro Ser Ala Leu Ala Ala His Gln Leu Gly Ser Leu Ser Ala Ile

80 85 90

Gly Ser Asp Glu Val Gly Thr Gly Asp Tyr Phe Gly Pro Ile Val

95 100 105

Val Ala Ala Ala Tyr Val Asp Arg Pro His Ile Ala Lys Ile Ala

25 110 115 120

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Ala Leu Gly Val Lys Asp Ser Lys Gln Leu Asn Asp Glu Ala Ile
125 130 135

Lys Arg Ile Ala Pro Ala Ile Met Glu Thr Val Pro His Ala Val
140 145 150

5 Thr Val Leu Asp Asn Ala Glu Tyr Asn Arg Trp Gln Arg Ser Gly
155 160 165

Met Pro Gln Thr Lys Met Lys Ala Leu Leu His Asn Arg Thr Leu
170 175 180

10 Val Lys Leu Val Asp Ala Ile Ala Pro Ala Glu Pro Glu Ala Ile
185 190 195

Ile Ile Asp Glu Phe Leu Lys Arg Asp Ser Tyr Phe Arg Tyr Leu
200 205 210

Ser Asp Glu Asp Arg Ile Ile Arg Glu Arg Val His Cys Leu Pro
215 220 225

15 Lys Ala Glu Ser Val His Val Ser Val Ala Ala Ala Ser Ile Ile
230 235 240

Ala Arg Tyr Val Phe Leu Glu Glu Met Glu Gln Leu Ser Arg Ala
245 250 255

Val Gly Leu Leu Leu Pro Lys Gly Ala Gly Ala Ile Val Asp Glu
20 260 265 270

Ala Ala Ala Asn Ile Ile Arg Ala Arg Gly Ala Glu Ala Leu Glu
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25 Ile Ala Lys Arg Arg

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305

<210> 114

<211> 39

5 <212> DNA

<213> Artificial Sequence

<220>

10 <223> PCR primer BcaRNIIInde for amplifying a gene encoding a
polypeptide having a RNaseHIII activity from Bacillus caldotenax

<400> 114

cgaacgttgt caaacatat gattcaagcc gaccaacag 39

15 <210> 115

<211> 663

<212> DNA

<213> Pyrococcus horikoshii

20 <400> 115

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tccaaacaat taactcctgg gcaacgtgaa aaactatttta gcaaattaat agatatacta 180

gacgattatt atgtttctct cgttaccccc aaggaaatag atgagaggca tcattctatg 240

25 aatgaactag aagctgagaa attcgttgta gccttgaatt ctttaaggat caagccgcag 300

aagatatatg tggactctgc cgatgtagat cctaagaggt ttgctagtct aataaaggct 360
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 gtatcggcag catcaataat tgcaaaggtc actagggata gagagataga gaagctaaag 480
 caaaagtatg gggaatttgg ttctggctat ccgagtgatc cgagaactaa ggagtggctt 540
 5 gaagaatatt acaaacaata tggtgacttt cctccaatag ttaggagaac ttgggaaacc 600
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 tga 663

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- 10 <210> 116
- <211> 33
- <212> DNA
- <213> Artificial Sequence
- 15 <220>
- <223> PCR primer 1650Nde for cloning a gene encoding a polypeptide having a RNaseHII activity from Pyrococcus furiosus
- <400> 116
- 20 caggaggaga gacatatgaa aataggggga att 33
- <210> 117
- <211> 33
- <212> DNA
- 25 <213> Artificial Sequence

<220>

<223> PCR primer 1650Bam for cloning a gene encoding a polypeptide having a RNaseHII activity from *Pyrococcus furiosus*

5

<400> 117

gaaggttgat gatccacttt ctaaggtttc tta 33

<210> 118

10

<211> 672

<212> DNA

<213> *Pyrococcus furiosus*

<400> 118

15 atgaaaatag ggggaattga cgaagcagga agaggaccag cgatagggcc attagtagta 60
 gctactgtcg tcgttgatga gaaaaacatt gagaagctca gaaacattgg agtaaaagac 120
 tccaaacaac taacacccca tgaaaggaag aatttatattt cccagataac ctcaatagcg 180
 gatgattaca aaatagtgat agtatcccca gaagaaatcg acaatagatc aggaacaatg 240
 aacgagttag aggtagagaa gtttgctctc gccttaaatt cgcttcagat aaaaccagct 300
 20 cttatatacg ctgatgcagc ggatgtagat gccaatagat ttgcaagctt gatagagaga 360
 agactcaatt ataaggcgaa gattattgcc gaacacaagg ccgatgcaaa gtatccagta 420
 gtttcagcag cttcaatact tgcaaagggtt gttagggatg aggaaattga aaaattaaaa 480
 aagcaatatg gagactttgg ctctgggtat ccaagtgatc caaaaaccaa gaaatggctt 540
 gaagagtact acaaaaaaca caactctttc cctccaatag tcagacgaac ctgggaaact 600
 25 gtaagaaaaa tagaggaaag cattaaagcc aaaaaatccc agctaacgct tgataaattc 660

tttaagaaac ct 672

<210> 119

<211> 224

5 <212> PRT

<213> *Pyrococcus furiosus*

<400> 119

10	Met Lys Ile Gly Gly Ile Asp Glu Ala Gly Arg Gly Pro Ala Ile
	1 5 10 15
	Gly Pro Leu Val Val Ala Thr Val Val Val Asp Glu Lys Asn Ile
	20 25 30
	Glu Lys Leu Arg Asn Ile Gly Val Lys Asp Ser Lys Gln Leu Thr
	35 40 45
15	Pro His Glu Arg Lys Asn Leu Phe Ser Gln Ile Thr Ser Ile Ala
	50 55 60
	Asp Asp Tyr Lys Ile Val Ile Val Ser Pro Glu Glu Ile Asp Asn
	65 70 75
	Arg Ser Gly Thr Met Asn Glu Leu Glu Val Glu Lys Phe Ala Leu
20	80 85 90
	Ala Leu Asn Ser Leu Gln Ile Lys Pro Ala Leu Ile Tyr Ala Asp
	95 100 105
	Ala Ala Asp Val Asp Ala Asn Arg Phe Ala Ser Leu Ile Glu Arg
	110 115 120
25	Arg Leu Asn Tyr Lys Ala Lys Ile Ile Ala Glu His Lys Ala Asp

[illegible]

<210> 121

<211> 26

<212> DNA

5 <213> Artificial Sequence

<220>

<223> PCR primer 915-F2 for cloning a gene encoding a polypeptide
having a RNaseHII activity from Thermotoga maritima

<400> 121

aaaccatggg aatagatgag ctttac 26

<210> 122

15 <211> 29

<212> DNA

<213> Artificial Sequence

<220>

20 <223> PCR primer 915-R1 for cloning a gene encoding a polypeptide
having a RNaseHII activity from Thermotoga maritima

<400> 122

aaatctagat cctcaacttt gtcgatgtg 29

25

<210> 123

<211> 30

<212> DNA

<213> Artificial Sequence

5

<220>

<223> PCR primer 915-R2 for cloning a gene encoding a polypeptide having a RNaseHII activity from *Thermotoga maritima*

10

<400> 123

aatctagatt aaaaaagagg gagattatgg 30

<210> 124

<211> 22

15

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as MCS-F to amplify a long DNA fragment

20

<400> 124

ccattcaggc tgcgcaactg tt

22

25

<210> 125

<212> DNA

5 $\langle 220 \rangle$

<400> 125

22

<210> 126

<211> 24

<212> DNA

 $\langle 220 \rangle$

<400> 126

24

25 <210> 127

<211> 24

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed chimeric oligonucleotide primer designated as MR1N3(24) to amplify a long DNA fragment. "nucleotides 22 to 24 are ribonucleotides-other nucleotides are deoxyribonucleotides"

10 <400> 127

ctttatgctt ccggctcgta tguu

24

<210> 128

<211> 20

15 <212> DNA

<213> Artificial Sequence

<220>

20 <223> Designed oligonucleotide primer to amplify a portion of lambda DNA. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 128

cccttctctg tttttgtccg

20

<213> Artificial Sequence

<223> Designed chimeric oligonucleotide primer to amplify a portion of lambda DNA. "nucleotides 18 to 20 are ribonucleotides--other nucleotides are deoxyribonucleotides"

aagcacctca ttaccctugc

⟨213⟩ Artificial Sequence

<223> Designed oligonucleotide primer to amplify a portion of lambda DNA

gggcggcgac ctcgcgggtt ttcg

25

⟨213⟩ Artificial Sequence

<223> Designed oligonucleotide primer to amplify a portion of lambda DNA

24

<213> Artificial Sequence

<223> Designed chimeric oligonucleotide primer to amplify a portion of Flavobacterium species DNA. "nucleotides 18 to 20 are ribonucleotides- other nucleotides are deoxyribonucleotides"

20

25

<210> 133

<211> 20

<212> DNA

<213> Artificial Sequence

5

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
Flavobacterium species DNA. "nucleotides 18 to 20 are ribonucleotides-
other nucleotides are deoxyribonucleotides"

10

<400> 133

tggtgtttaa acttattgcg

20

<210> 134

15

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

20

<223> Designed oligonucleotide primer to amplify a portion of
Flavobacterium species DNA.

<400> 134

ccatcagcta taaacacaaa cagc

24

25

⟨213⟩ Artificial Sequence

5

<223> Designed oligonucleotide primer to amplify a portion of Flavobacterium species DNA.

10

tgttttgacc aaacatagta atgc

24

<211> 21

15

<213> Artificial Sequence

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.
"nucleotides 19 to 21 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

25

tcgttaaata gtatacggac a

21

<212> DNA

 $\langle 220 \rangle$

10 "nucleotides 18 to 20 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

tgctcaataa tcagacgaag

20

<211> 24

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Designed oligonucleotide primer to amplify a portion of vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

25 $\langle 400 \rangle$ 138

24

<210> 139

<211> 24

5 $\langle 212 \rangle$ DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

10 <223> Designed oligonucleotide primer to amplify a portion of vero
toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

<400> 139

24

15 $\langle 210 \rangle$ 140

<211> 21

<212> DNA

⟨213⟩ Artificial Sequence

20 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.
"nucleotides 18 to 20 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

20

<213> Artificial Sequence

10 <223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.
"nucleotides 18 to 20 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

20

<213> Artificial Sequence

25 <223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

```
"nucleotides 18 to 20 are ribonucleotides-other nucleotides are
deoxyribonucleotides"
```

<400> 142

5 atagacatca agccctcgua

20

<210> 143

<211> 21

<212> DNA

10 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

15

<400> 143

tcgttaaata gtatacggac a

21

<210> 144

20 $\langle 211 \rangle$ 20

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

25 <223> Designed oligonucleotide primer to amplify a portion of vero

<400> 144

20

5

<210> 145

$\langle 211 \rangle$ 20

<212> DNA

⟨213⟩ Artificial Sequence

10

 $\langle 220 \rangle$

<223> Designed chimeric oligonucleotide primer to amplify a portion of lambda DNA. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

15

<400> 145

gaacaatgga agtcaacaaa

20

<210> 146

20

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

25

<223> Designed oligonucleotide primer to amplify a portion of viroid

CSVd.

<400> 146

tacttgtggt tcctgtggtg

20

5

<210> 147

<211> 20

<212> DNA

<213> Artificial Sequence

10

<220>

<223> Designed oligonucleotide primer to amplify a portion of viroid
CSVd.

15

<400> 147

atactaaggt tccaagggt

20

<210> 148

<211> 18

20

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
viroid CSVd. "nucleotides 16 to 18 are ribonucleotides-other

25

T0330"02E050

nucleotides are deoxyribonucleotides"

<400> 148

ggaaacctgg aggaaguc

18

5

<210> 149

<211> 20

<212> DNA

<213> Artificial Sequence

10

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
viroid CSVd. "nucleotides 18 to 20 are ribonucleotides-other
nucleotides are deoxyribonucleotides"

15

<400> 149

gtgaaaaccc tgtttaggau

20

<210> 150

20

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

25 <223> Designed chimeric oligonucleotide primer to amplify a portion of

Flavobacterium species DNA. "nucleotides 18 to 20 are ribonucleotides-
other nucleotides are deoxyribonucleotides"

<400> 150

5 acctagatat aagctctaca 20

<210> 151

<211> 20

<212> DNA

10 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
Flavobacterium species DNA. "nucleotides 18 to 20 are ribonucleotides-
15 other nucleotides are deoxyribonucleotides"

<400> 151

aaatagatgt tttagcagag 20

20 <210> 152

<211> 20

<212> DNA

<213> Artificial Sequence

25 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of Flavobacterium species DNA. "nucleotides 18 to 20 are ribonucleotides- other nucleotides are deoxyribonucleotides"

5 <400> 152

atagataaaa aaaactccac

20

<210> 153

<211> 21

10 <212> DNA

<213> Artificial Sequence

<220>

15 <223> Designed chimeric oligonucleotide primer to amplify a portion of vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157. "nucleotides 19 to 21 are ribonucleotides-nucleotide 18 is inosine- other nucleotides are deoxyribonucleotides"

<400> 153

20 tcgttaaata gtatacgiac a

21

<210> 154

<211> 21

<212> DNA

25 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

5 "nucleotides 19 to 21 are ribonucleotides-nucleotide 17 is inosine
other nucleotides are deoxyribonucleotides"

<400> 154

tcgttaaata gtatacigac a 21

10

<210> 155

<211> 21

<212> DNA

<213> Artificial Sequence

15

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

20 "nucleotides 19 to 21 are ribonucleotides-nucleotide 16 is inosine-
other nucleotides are deoxyribonucleotides"

<400> 155

tcgttaaata gtataiggac a 21

25 <210> 156

<211> 20

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.
"nucleotides 18 to 20 are ribonucleotides-nucleotide 17 is inosine-
other nucleotides are deoxyribonucleotides"

10

<400> 156

tgctcaataa tcagaciaag

20

<210> 157

15 <211> 20

<212> DNA

<213> Artificial Sequence

<220>

20 <223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.
"nucleotides 18 to 20 are ribonucleotides-nucleotide 16 is inosine-
other nucleotides are deoxyribonucleotides"

25 <400> 157

tgctcaataa tcagaigaag

20

<210> 158

<211> 20

5 <212> DNA

<213> Artificial Sequence

<220>

10 <223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

"nucleotides 18 to 20 are ribonucleotides-nucleotide 15 is inosine-
other nucleotides are deoxyribonucleotides"

<400> 158

15 tgctcaataa tcagicgaag

20

<210> 159

<211> 21

<212> DNA

20 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

25 "nucleotides 9 to 11 and 19 to 21 are ribonucleotides-other

<400> 159

21

5

<211> 20

⟨213⟩ Artificial Sequence

10

 $\langle 220 \rangle$

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.

"nucleotides 8 to 10 and 18 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

15

<400> 160

20

20

<210> 161

<211> 20

<212> DNA

<213> Artificial Sequence

25

 $\langle 220 \rangle$

<223> Designed chimeric oligonucleotide primer to amplify a portion of
 vero toxin 2-encoding sequence from hemorrhagic Escherichia coli 0-157.
 "nucleotides 18 to 20 are ribonucleotides-other nucleotides are
 deoxyribonucleotides"

5

<400> 161

gtccccctgag atatatguuc

20

<210> 162

10

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

15

<223> Designed oligonucleotide probe to detect a DNA fragment
 amplifying a portion of vero toxin 2-encoding sequence from hemorrhagic
 Escherichia coli 0-157.

<400> 162

20

ccaacaaagt tatgtctctt cgttaaatag

30

<210> 163

<211> 20

<212> DNA

25

<213> Artificial Sequence

TOXIN 2-ENCODING SEQUENCE

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
iNOS-encoding sequence from mouse. "nucleotides 18 to 20 are
5 ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 163

atgccattga gttcatcaac

20

10 <210> 164

<211> 19

<212> DNA

<213> Artificial Sequence

15 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
iNOS-encoding sequence from mouse. "nucleotides 17 to 19 are
ribonucleotides-other nucleotides are deoxyribonucleotides"

20 <400> 164

tcttggtggc aaagatgag

19

<210> 165

<211> 20

25 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of iNOS-
5 encoding sequence from mouse.

<400> 165

atgccattga gttcatcaac

20

10 <210> 166

<211> 19

<212> DNA

<213> Artificial Sequence

15 <220>

<223> Designed oligonucleotide primer to amplify a portion of iNOS-
encoding sequence from mouse

<400> 166

20 tcttggtggc aaagatgag

19

<210> 167

<211> 20

<212> DNA

25 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as GMO-PCR-F 20mer

5 <400> 167

atcgttgaag atgcctctgc

20

<210> 168

<211> 20

10 <212> DNA

<213> Artificial Sequence

<220>

<223> designed oligonucleotide primer designated as GMO-PCR-R 20mer

15

<400> 168

tccgtatgat cgcgcgtcat

20

<210> 169

20 <211> 20

<212> DNA

<213> Artificial Sequence

<220>

25 <223> Designed chimeric oligonucleotide primer designated as GMO-S1

20mer. "nucleotides 19 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 169

5 tttggagagg acacgtgac

20

<210> 170

<211> 20

<212> DNA

10 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as GM0-S2 20mer.
"nucleotides 19 to 20 are ribonucleotides-other nucleotides are
15 deoxyribonucleotides"

<400> 170

ggacacgctg acaagctgac

20

20 <210> 171

<211> 20

<212> DNA

<213> Artificial Sequence

25 <220>

<223> Designed oligonucleotide primer designated as GMO-A1 20mer.
 "nucleotides 19 to 20 are ribonucleotides-other nucleotides are
 deoxyribonucleotides"

5 <400> 171

ggctgtagcc actgatgcug

20

<210> 172

<211> 20

10 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as GMO-A2 20 mer.

15 "nucleotides 19 to 20 are ribonucleotides-other nucleotides are
 deoxyribonucleotides"

<400> 172

ttccggaag gccagaggau

20

20

<210> 173

<211> 21

<212> DNA

<213> Artificial Sequence

25

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli O-157.

"nucleotides 18 to 20 are (alpha-thio)ribonucleotides-other
nucleotides are deoxyribonucleotides"

<400> 173

tactgggtt tttcttcggu a

20

<210> 174

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
vero toxin 2-encoding sequence from hemorrhagic Escherichia coli O-157.

"nucleotides 18 to 20 are (alpha-thio)ribonucleotides-other
nucleotides are deoxyribonucleotides"

<400> 174

atagacatca agccctcgua

20

<210> 175

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed chimeric oligonucleotide primer to amplify a portion of
INOS-encoding sequence from mouse. "nucleotides 20 to 22 are
ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 175

10 tcatgccatt gagttcatca ac 22

<210> 176

<211> 22

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
INOS-encoding sequence from mouse. "nucleotides 20 to 22 are
20 ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 176

tggtagggttc ctggttgtttc ua 22

25 <210> 177

<213> Artificial Sequence

<223> Designed oligonucleotide primer to amplify a portion of INOS-encoding sequence from mouse.

22

<212> DNA

<223> Designed oligonucleotide primer to amplify a portion of INOS-encoding sequence from mouse.

22

25 $\langle 211 \rangle$ 20

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed chimeric oligonucleotide primer to amplify a portion of
lambda DNA. "nucleotides 18 to 20 are ribonucleotides-other nucleotides
are deoxyribonucleotides"

<400> 179

10 ctgcgaggcg gtggcaaggg

20

<210> 180

<211> 21

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
lambda DNA. "nucleotides 19 to 21 are ribonucleotides-other nucleotides
20 are deoxyribonucleotides"

<400> 180

ctgcctcgct ggccgtgccg c

21

25 <210> 181

092533-03301

<211> 23

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
INOS-encoding sequence from mouse. "nucleotides 21 to 23 are
ribonucleotides-other nucleotides are deoxyribonucleotides"

10 <400> 181

ctcatgccat tgagttcatc aac 23

<210> 182

<211> 22

15 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
20 INOS-encoding sequence from mouse. "nucleotides 20 to 22 are
ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 182

gctggtaggt tcctgttggu uc 22

25

<210> 183

<211> 19

<212> DNA

<213> Artificial Sequence

5

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
pDON-AI DNA. "nucleotides 17 to 19 are ribonucleotides-other
nucleotides are deoxyribonucleotides"

10

<400> 183

agctctgtat ctggcggac

19

<210> 184

15

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

20

<223> Designed chimeric oligonucleotide primer to amplify a portion of
pDON-AI DNA. "nucleotides 19 to 21 are ribonucleotides-other
nucleotides are deoxyribonucleotides"

<400> 184

25

gatcgggatt tttggactca g

21

<210> 185

<211> 21

<212> DNA

5 <213> Artificial Sequence

<220>

10 <223> Designed chimeric oligonucleotide primer to amplify a portion of
HPV type16 DNA. "nucleotides 19 to 21 are ribonucleotides-other
nucleotides are deoxyribonucleotides"

<400> 185

caaaagagaa ctgcaatguu u

21

15 <210> 186

<211> 21

<212> DNA

<213> Artificial Sequence

20 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
HPV type16 DNA. "nucleotides 19 to 21 are ribonucleotides-other
nucleotides are deoxyribonucleotides"

25 <400> 186

gttgcttgca gtacacacau u

21

<210> 187

<211> 27

5 <212> DNA

<213> Artificial Sequence

<220>

10 <223> Designed oligonucleotide probe to detect a DNA fragment
amplifying a portion of HPV DNA.

<400> 187

gaggaccac aggagcgacc cagaaag

27

15 <210> 188

<211> 20

<212> DNA

<213> Artificial Sequence

20 <220>

<223> Designed oligonucleotide primer to amplify a portion of HCV.

<400> 188

cactccacca tgaatcactc

20

25

<210> 189

<211> 20

<212> DNA

<213> Artificial Sequence

5

<220>

<223> Designed oligonucleotide primer to amplify a portion of HCV.

<400> 189

10

ggtgcacggt ctacgagacc

20

<210> 190

<211> 21

<212> DNA

15

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of HCV. "nucleotides 19 to 21 are ribonucleotides-other nucleotides are deoxyribonucleotides"

20

<400> 190

ctgtgaggaa ctactgtcuu c

21

25

<210> 191

TOC 103/158

<211> 18

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of HCV. "nucleotides 16 to 18 are ribonucleotides-other nucleotides are deoxyribonucleotides"

10 <400> 191

gcagaccact atggcucu

18

<210> 192

<211> 30

15 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide probe to detect a DNA fragment
20 amplifying portion of HCV.

<400> 192

gtatgagtgt cgtgcagcct ccaggacccc

30

25 <210> 193

<213> Artificial Sequence

<223> Designed chimeric oligonucleotide primer to amplify a portion of adenovirus. "nucleotides 19 to 21 are ribonucleotides—other nucleotides are deoxyribonucleotides"

tgagacatat tatctgccac g 21

<211> 21

<213> Artificial Sequence

<223> Designed chimeric oligonucleotide primer to amplify a portion of adenovirus. "nucleotides 19 to 21 are ribonucleotides-other nucleotides are deoxyribonucleotides"

aatggctag gaggtggaag a 21

<210> 195

<211> 21

<212> DNA

<213> Artificial Sequence

5

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of adenovirus. "nucleotides 19 to 21 are ribonucleotides-other nucleotides are deoxyribonucleotides"

10

<400> 195

ttatcagcca gtacctctuc g

21

<210> 196

15

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

20

<223> Designed oligonucleotide primer to amplify a portion of adenovirus

<400> 196

tgagacatat tatctgccac g

21

25

<210> 197

<211> 21

<212> DNA

<213> Artificial Sequence

5

<220>

<223> Designed oligonucleotide primer to amplify a portion of adenovirus.

10

<400> 197

aaatggctag gaggtggaag a

21

<210> 198

<211> 20

15

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of viroid CSVd.

20

<400> 198

ggggaaacct ggaggaagtc

20

25

<210> 199

<211> 20

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed oligonucleotide primer to amplify a portion of viroid CSVd.

<400> 199

10 cgggtagtag ccaaaggaag

20

<210> 200

<211> 19

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of pDON-AI DNA.

20

<400> 200

agctctgtat ctggcggac

19

<210> 201

25 <211> 21

108/158

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed oligonucleotide primer to amplify a portion of pDON-AI
DNA.

<400> 201

gatcgggatt ttggactca g

21

10

<210> 202

<211> 20

<212> DNA

<213> Artificial Sequence

15

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
verotoxin-1 encoding sequence from hemorrhagic Escherichia coli 0-
157. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are
20 deoxyribonucleotides"

<400> 202

ggggataatt tgtttgcagu

20

25

<210> 203

<211> 20

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of verotoxin-1 encoding sequence from hemorrhagic Escherichia coli 0-157. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

10

<400> 203

tcgttcaaca ataagccgua

20

<210> 204

15

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

20

<223> Designed oligonucleotide probe to detect a DNA fragment amplifying a portion of verotoxin-1 encoding sequence from hemorrhagic Escherichia coli 0-157.

<400> 204

25

cgcccttcct ctggatctac ccctctgaca

30

<210> 205

<211> 21

<212> DNA

5 <213> Artificial Sequence

<220>

10 <223> Designed chimeric oligonucleotide primer to amplify a portion of
botulinum toxin A encoding sequence from Clostridium
botulinum. "nucleotides 19 to 21 are ribonucleotides-other nucleotides
are deoxyribonucleotides"

<400> 205

caccagaagc aaaacaaguu c

21

15

<210> 206

<211> 23

<212> DNA

<213> Artificial Sequence

20

<220>

25 <223> Designed chimeric oligonucleotide primer to amplify a portion of
botulinum toxin A encoding sequence from Clostridium
botulinum. "nucleotides 21 to 23 are ribonucleotides-other nucleotides
are deoxyribonucleotides"

<400> 206

ctattgatgt taacaacatt cuu

23

5 <210> 207

<211> 30

<212> DNA

<213> Artificial Sequence

10 <220>

<223> Designed oligonucleotide probe to detect a DNA fragment
amplifying a portion of botulinum toxin A encoding sequence from
Clostridium botulinum.

15 <400> 207

gggagttaca aaattatttg agagaattta

30

<210> 208

<211> 21

20 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
25 viroid CSVd. "nucleotides 19 to 21 are ribonucleotides-other

nucleotides are deoxyribonucleotides"

<400> 208

cacccttcct ttagtttccu u

21

5

<210> 209

<211> 20

<212> DNA

<213> Artificial Sequence

10

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of viroid CSVd. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

15

<400> 209

cgttgaagct tcagttguuu

20

<210> 210

20

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

25

<223> Designed oligonucleotide probe to detect a DNA fragment

amplifying a portion of viroid CSVd.

<400> 210

ccttcctctc ctggagaggt cttctgccct

30

5

<210> 211

<211> 21

<212> DNA

<213> Artificial Sequence

10

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
viroid CSVd. "nucleotides 19 to 21 are ribonucleotides-other
nucleotides are deoxyribonucleotides"

15

<400> 211

cacccttct ttagtttccu u

21

<210> 212

20

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

25

<223> Designed chimeric oligonucleotide primer to amplify a portion of

viroid CSVd. "nucleotides 19 to 21 are ribonucleotides—other nucleotides are deoxyribonucleotides"

<400> 212

5 cgttgaagct tcagttgtuu c 21

<210> 213

<211> 21

<212> DNA

10 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of viroid CSVd.

15

<400> 213

cacccttct ttagtttct t 21

<210> 214

20 <211> 21

<212> DNA

<213> Artificial Sequence

<220>

25 <223> Designed oligonucleotide primer to amplify a portion of viroid

<400> 214

tcagttgttt

C

5 21

<210> 215

<211> 20

<212> DNA

10 <213> Artificial Sequence

 $\langle 220 \rangle$

15 <223> Designed chimeric oligonucleotide primer to amplify a portion of
c-ki-ras oncogene. "nucleotides 18 to 20 are ribonucleotides-other
nucleotides are deoxyribonucleotides"

<400> 215

gactgaatat aaacttgugg

20

20 <210> 216

<211> 20

<212> DNA

<213> Artificial Sequence

25 <220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of c-ki-ras oncogene. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

5 <400> 216

ctattgttgg atcatatucg

20

<210> 217

<211> 20

10 <212> DNA

<213> Artificial Sequence

<220>

15 <223> Designed oligonucleotide primer to amplify a portion of c-ki-ras oncogene.

<400> 217

gactgaatat aaacttgttg

20

20 <210> 218

<211> 20

<212> DNA

<213> Artificial Sequence

25 <220>

<223> Designed oligonucleotide primer to amplify a portion of c-ki-ras oncogene.

<400> 218

5 ctattggttgatcatattcg

20

<210> 219

<211> 20

10 <212> DNA

<213> Artificial Sequence

<220>

15 <223> Designed chimeric oligonucleotide primer to amplify a portion of verotoxin-2 encoding sequence from hemorrhagic Escherichia coli 0-157. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 219

20 gacttttcga cccaacaaag

20

<210> 220

<211> 20

<212> DNA

25 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer to amplify a portion of
verotoxin-2 encoding sequence from hemorrhagic Escherichia coli 0-
5 157. "nucleotides 18 to 20 are ribonucleotides-other nucleotides are
deoxyribonucleotides"

<400> 220

atatccacag caaaataacu

20

<210> 221

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of INOS-
encoding sequence from mouse.

<400> 221

cacaaggcca catcgattt c

21

<210> 222

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of INOS-
5 encoding sequence from mouse.

<400> 222

tgcataccac ttcaaccga g

21

10 <210> 223

<211> 25

<212> DNA

<213> Artificial Sequence

15 <220>

<223> Designed oligonucleotide primer designated as pUC19 upper 150 to
amplify a portion of plasmid pUC19.

<400> 223

20 ggtgtcacgc tcgtcgtttg gtatg

25

<210> 224

<211> 25

<212> DNA

25 <213> Artificial Sequence

T
O
P
S
E
C
R
E
T

<220>

<223> Designed chimeric oligonucleotide primer designated as pUC19 lower NN to amplify a portion of plasmid pUC19.

5

<400> 224

gataacactg cggccaactt acttc

25

<210> 225

10

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

15

<223> Designed chimeric oligonucleotide primer designated as SEA-1 to amplify a portion of Staphylococcus aureus. "nucleotides 19 to 21 are ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 225

20

tgtatgtatg gtggtgtaac g

21

<210> 226

<211> 21

<212> DNA

25

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer designated as SEA-2 to
amplify a portion of Staphylococcus aureus. "nucleotides 19 to 21 are
5 ribonucleotides-other nucleotides are deoxyribonucleotides"

<400> 226

taaccgtttc caaaggtacu g

21

10

<210> 227

<211> 19

<212> DNA

<213> Artificial Sequence

15

<220>

<223> Designed chimeric oligonucleotide primer designated as HCV-F3 to
amplify a portion of HCV. "nucleotides 17 to 19 are ribonucleotides-
other nucleotides are deoxyribonucleotides"

20

<400> 227

gcgtctagcc atggcguaa

19

<210> 228

<211> 18

25

<212> DNA

TOE220-227-228

<213> Artificial Sequence

<220>

5 <223> Designed chimeric oligonucleotide primer designated as HCV-R1 to
amplify a portion of HCV. "nucleotides 16 to 18 are ribonucleotides-
other nucleotides are deoxyribonucleotides"

<400> 228

gcagaccact atggcucu

18

<210> 229

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as MF2 to amplify a
portion of pUC19 plasmid DNA.

<400> 229

ggatgtgctg caaggcgatt aagttgggta

30

<210> 230

<211> 30

<212> DNA

$\langle 220 \rangle$

<400> 230

10 $\langle 210 \rangle$ 231

<212> DNA

15 $\langle 220 \rangle$

<400> 231

<210> 232

<211> 714

<212> DNA

25 <213> Thermotoga maritima

<400> 232

atgggaatag atgagcttta caaaaaagag tttggaatcg tagcaggtgt ggatgaagcg 60
 ggaagagggt gcctcgcagg tcccgttgtg gcggccgctg tcgttctgga aaaagaaata 120
 5 gaaggaataa acgattcaaa acagctttcc cctgcgaaga gggaaagact tttagatgaa 180
 ataatggaga aggcagcagt tgggttagga attgcgtctc cagaggaaat agatctctac 240
 aacatattca atgccacaaa acttgctatg aatcgagcac tggagaacct gtctgtgaaa 300
 ccatcatttg tactcgttga cgggaaagga atcgagttga gcgttcccgg tacatgctta 360
 gtgaaggag accagaaaag caaattgata ggagcagctt ccattgttgc gaaggtcttc 420
 10 agagatagat tgatgagcga gtttcacagg atgtatccac agttttcctt ccacaaacac 480
 aaaggttacg ccacaaaaga acatctgaac gaaatcagaa agaacggagt tttaccaatc 540
 caccggctga gttttgaacc tgtttttagaa cttctgaccg atgatttggt gagggagttc 600
 ttcgaaaaag gcctcatctc cgaaaatcga ttcgaacgaa tattgaatct tctgggggcg 660
 agaaaaagtg tggttttccg gaaagaaaga acaaaccata atctccctct tttt 714

15

<210> 233

<211> 238

<212> PRT

<213> *Thermotoga maritima*

20

<400> 233

Met Gly Ile Asp Glu Leu Tyr Lys Lys Glu Phe Gly Ile Val Ala

1

5

10

15

Gly Val Asp Glu Ala Gly Arg Gly Cys Leu Ala Gly Pro Val Val

25

20

25

30

25 Phe Glu Arg Ile Leu Asn Leu Leu Gly Ala Arg Lys Ser Val Val

215

220

225

Phe Arg Lys Glu Arg Thr Asn His Asn Leu Pro Leu Phe

230

235

5 <210> 234

<211> 663

<212> DNA

<213> *Pyrococcus horikoshii*

10 <400> 234

atgaaggttg ctggagttga tgaagcgggg agggggccgg taattggccc gttagtaatt 60

ggagtagccg ttatagatga gaaaaatatt gagagggttac gtgacattgg ggttaaagac 120

tccaaacaat taactcctgg gcaacgtgaa aaactattta gcaaattaat agatataccta 180

gacgattatt atgttcttct cgttaccccc aaggaaatag atgagaggca tcattctatg 240

15 aatgaactag aagctgagaa attcgttgta gccttgaatt ctttaaggat caagccgcag 300

aagatatatg tggactctgc cgatgtagat cctaagaggt ttgctagtct aataaaggct 360

gggttgaaat atgaagccac ggttatcgcc gagcataaag ccgatgcaaa gtatgagata 420

gtatcggcag catcaataat tgcaaaggtc actagggata gagagataga gaagctaaag 480

caaaagtatg gggaatttgg ttctggctat ccgagtgatc cgagaactaa ggagtggctt 540

20 gaagaatatt acaacaata tgggtgacttt cctccaatag ttaggagaac ttgggaaacc 600

gctaggaaga tagaggaaag gtttagaaaa aatcagctaa cgcttgataa attccttaag 660

tga 663

<210> 235

25 <211> 30

<212> DNA

<213> Artificial Sequence

<220>

5 <223> PCR primer PhoNde for cloning a gene encoding a polypeptide
having a RNaseHII activity from Pyrococcus horikoshii

<400> 235

aggaggaaaa tcatatgaag gttgctggag 30

<210> 236

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer PhoBam for cloning a gene encoding a polypeptide
having a RNaseHII activity from Pyrococcus horikoshii

<400> 236

ttacatgaag gatccaagat cacttaagga 30

<210> 237

<211> 663

<212> DNA

<213> *Pyrococcus horikoshii*

<400> 237

atgaaggttg ctggagttga tgaagcgggg agggggccgg taattggccc gttagtaatt 60
 5 ggagtagccg ttatagatga gaaaaatatt gagaggttac gtgacattgg ggttaaagac 120
 tccaaacaat taactcctgg gcaacgtgaa aaactattta gcaaattaat agatataccta 180
 gacgattatt atgttcttct cgttaccccc aaggaaatag atgagaggca tcattctatg 240
 aatgaactag aagctgagaa attcgttgta gccttgaatt cttaaggat caagccgcag 300
 aagatatatg tggactctgc cgatgtagat cctaagaggt ttgctagtct aataaaggct 360
 10 gggttgaaat atgaagccac ggttatcgcc gagcataaag ccgatgcaaa gtatgagata 420
 gtatcggcag catcaataat tgcaaaggtc actagggata gagagataga gaagctaaag 480
 caaaagtatg gggaatttgg ttctggctat ccgagtgatc cgagaactaa ggagtggcctt 540
 gaagaatatt acaaacaata tggtgacttt cctccaatag ttaggagaac ttgggaaacc 600
 gctaggaaga tagaggaaag gtttagaaaa aatcagctaa cgcttgataa attccttaag 660
 15 tgatcttggg tcc 663

<210> 238

<211> 220

<212> PRT

20 <213> *Pyrococcus horikoshii*

<400> 238

Met Lys Val Ala Gly Val Asp Glu Ala Gly Arg Gly Pro Val Ile

1

5

10

15

25 Gly Pro Leu Val Ile Gly Val Ala Val Ile Asp Glu Lys Asn Ile

25

Asn Gln Leu Thr Leu Asp Lys Phe Leu Lys

215

220

<210> 239

5 <211> 626

<212> DNA

<213> Archaeoglobus fulgidus

<400> 239

10 atgaaggcag gcatcgatga ggctggaaag ggctgcgtca tcggcccact ggttggttgca 60
 ggagtggctt gcagcgatga ggataggctg agaaagcttg gtgtgaaaga ctccaaaaag 120
 ctaagtcagg ggaggagaga ggaactagcc gaggaataa ggaaaatctg cagaacggag 180
 gttttgaaag tttctccga aaatctcgac gaaaggatgg ctgctaaaac cataaacgag 240
 attttgaagg agtgctacgc tgaaataatt ctcaggctga agccggaaat tgcttatgtt 300
 15 gacagtcctg atgtgattcc cgagagactt tcgagggagc ttgaggagat tacgggggtt 360
 agagttgttg ccgagcaciaa ggcggaacgag aagtatcccc tggtagctgc ggcttcaatc 420
 atcgcaaagg tggaaaggga gcgggagatt gagaggctga aagaaaaatt cggggatttc 480
 ggcagcggct atgcgagcga tccgaggaca agagaagtgc tgaaggagtg gatagcttca 540
 ggcagaattc cgagctgcgt gagaatgcgc tggaagacgg tgtcaaattc gaggcagaag 600
 20 acgcttgacg atttctaaac gaaacc 626

<210> 240

<211> 30

<212> DNA

25 <213> Artificial Sequence

<223> PCR primer AfuNde for cloning a gene encoding a polypeptide having a RNaseHII activity from *Archaeoglobus fulgidus*

<400> 240

30

10

<211> 30

<212> DNA

<213> Artificial Sequence

15

<223> PCR primer AfuBam for cloning a gene encoding a polypeptide having a RNaseHIII activity from *Archaeoglobus fulgidus*

<400> 241

30

20

<210> 242

· $\langle 211 \rangle$ 638

<212> DNA

〈213〉 *Archaeoglobus fulgidus*

25

<400> 242

catatgaagg caggcatcga tgaggctgga aagggtgcg tcatcgcccc actggttggt 60
 gcaggagtgg cttgcagcga tgaggatagg ctgagaaagc ttggtgtgaa agactccaaa 120
 aagctaagtc aggggaggag agaggaacta gccgaggaaa taaggaaaat ctgcagaacg 180
 5 gaggttttga aagtttctcc cgaaaatctc gacgaaagga tggctgctaa aaccataaac 240
 gagattttga aggagtgcta cgctgaaata attctcaggc tgaagccgga aattgcttat 300
 gttgacagtc ctgatgtgat tcccgagaga ctttcgaggg agcttgagga gattacgggg 360
 ttgagagttg tggccgagca caaggcggac gagaagtatc ccctggtagc tgcggcttca 420
 atcatcgcaa aggttgaaag ggagcgggag attgagaggc tgaaagaaaa attcggggat 480
 10 ttcggcagcg gctatgcgag cgatccgagg acaagagaag tgctgaagga gtggatagct 540
 tcaggcagaa ttccgagctg cgtgagaatg cgctggaaga cggtgtcaaa tctgaggcag 600
 aagacgcttg acgatttcta aacggatccc cggttacc 638

<210> 243

15 <211> 205

<212> PRT

<213> Archaeoglobus fulgidus

<400> 243

20 Met Lys Ala Gly Ile Asp Glu Ala Gly Lys Gly Cys Val Ile Gly
 1 5 10 15
 Pro Leu Val Val Ala Gly Val Ala Cys Ser Asp Glu Asp Arg Leu
 20 25 30
 Arg Lys Leu Gly Val Lys Asp Ser Lys Lys Leu Ser Gln Gly Arg
 25 35 40 45

Arg Glu Glu Leu Ala Glu Glu Ile Arg Lys Ile Cys Arg Thr Glu
 50 55 60
 Val Leu Lys Val Ser Pro Glu Asn Leu Asp Glu Arg Met Ala Ala
 65 70 75
 5 Lys Thr Ile Asn Glu Ile Leu Lys Glu Cys Tyr Ala Glu Ile Ile
 80 85 90
 Leu Arg Leu Lys Pro Glu Ile Ala Tyr Val Asp Ser Pro Asp Val
 95 100 105
 10 Ile Pro Glu Arg Leu Ser Arg Glu Leu Glu Glu Ile Thr Gly Leu
 110 115 120
 Arg Val Val Ala Glu HisLys Ala Asp Glu Lys Tyr Pro Leu Val
 125 130 135
 Ala Ala Ala Ser Ile Ile Ala Lys Val Glu Arg Glu Arg Glu Ile
 140 145 150
 15 Glu Arg Leu Lys Glu Lys Phe Gly Asp Phe Gly Ser Gly Tyr Ala
 155 160 165
 Ser Asp Pro Arg Thr Arg Glu Val Leu Lys Glu Trp Ile Ala Ser
 170 175 180
 Gly Arg Ile Pro Ser Cys Val Arg Met Arg Trp Lys Thr Val Ser
 20 185 190 195
 Asn Leu Arg Gln Lys Thr Leu Asp Asp Phe
 200 205

<210> 244

25 <211> 18

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed chimeric oligonucleotide primer designated as MTIS2F to
amplify a portion of Mycobacterium tuberculosis DNA."nucleotides 16 to
18 are ribonucleotides-other nucleotides are deoxyribonucleotides."

<400> 244

10 tctcgtccag cgccgcuu 18

<210> 245

<211> 21

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer designated as MTIS2R to
amplify a portion of Mycobacterium tuberculosis DNA."nucleotides 19 to
20 21 are ribonucleotides-other nucleotides are deoxyribonucleotides."

<400> 245

gacaaaggcc acgtaggcga a 21

25 <210> 246

<213> Artificial Sequence

<223> Designed chimeric oligonucleotide primer designated as CT2F to amplify a portion of Chlamydia trachomatis cryptic plasmid DNA."nucleotides 18 to 20 are ribonucleotides--other nucleotides are deoxyribonucleotides."

20.

<213> Artificial Sequence

<223> Designed chimeric oligonucleotide primer designated as CT2R to amplify a portion of Chlamydia trachomatis cryptic plasmid DNA."nucleotides 16 to 18 are ribonucleotides--other nucleotides are deoxyribonucleotides."

<400> 247

aggcctctga aacgacuu

18

<210> 248

<211> 19

5 <212> DNA

<213> Artificial Sequence

<220>

10 <223> Designed chimeric oligonucleotide primer designated as K-F-1033(60) to amplify a portion of Mycobacterium tuberculosis DNA."nucleotides 17 to 19 are ribonucleotides-other nucleotides are deoxyribonucleotides."

<400> 248

15 cacatcgatc cggttcagc

19

<210> 249

<211> 20

<212> DNA

20 <213> Artificial Sequence

<220>

25 <223> Designed chimeric oligonucleotide primer designated as K-R-1133(62) to amplify a portion of Mycobacterium tuberculosis DNA."nucleotides 18 to 20 are ribonucleotides-other nucleotides are

deoxyribonucleotides."

<400> 249

tgatcgtctc ggctagtgca

20

5

<210> 250

<211> 22

<212> DNA

<213> Artificial Sequence

10

<220>

<223> Designed chimeric oligonucleotide primer designated as K-F-1033(68) to amplify a portion of Mycobacterium tuberculosis DNA."nucleotides 20 to 22 are ribonucleotides-other nucleotides are deoxyribonucleotides."

15

<400> 250

gtacacatcg atccggttca gc

22

20

<210> 251

<211> 22

<212> DNA

<213> Artificial Sequence

25

<220>

<223> Designed chimeric oligonucleotide primer designated as K-R-1133(68) to amplify a portion of Mycobacterium tuberculosis DNA."nucleotides 20 to 22 are ribonucleotides-other nucleotides are deoxyribonucleotides."

5

<400> 251

gttgatcgtc tcggctagtg ca

22

<210> 252

10

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

15

<223> Designed oligonucleotide primer designated as F26 to amplify a portion of Mycobacterium tuberculosis DNA.

<400> 252

ccggagactc cagttcttgg

20

20

<210> 253

<211> 20

<212> DNA

<213> Artificial Sequence

25

<223> Designed oligonucleotide primer designated as R1310 to amplify a portion of *Mycobacterium tuberculosis* DNA.

20

<211> 22

<213> Artificial Sequence

15 <223> Designed chimeric oligonucleotide primer designated as pDON-AI-68-1 to amplify a portion of pDON-AI."nucleotides 20 to 22 are ribonucleotides-other nucleotides are deoxyribonucleotides."

actagctctg tatctggcgg ac

22

<210> 255

<211> 23

<212> DNA

<213> Artificial Sequence

25

<220>

<223> Designed chimeric oligonucleotide primer designated as pDON-AI-68-2 to amplify a portion of pDON-AI."nucleotides 21 to 23 are ribonucleotides-other nucleotides are deoxyribonucleotides."

5

<400> 255

acgatcggga tttttggact cag

23

<210> 256

10

<211> 300

<212> DNA

<213> Homo sapiens proto-oncogene Wnt-5a

<400> 256

15

cactagattt tttgtttggg gaggttggt tgaacataaa tgaaatatcc tgtattttct 60
tagggatact tggttagtaa attataatag tagaaataat acatgaatcc cattcacagg 120
tttctcagcc caagcaacaa ggtaattgcg tgccattcag cactgcacca gacgagacaa 180
cctatttgag gaaaaacagt gaaatccacc ttctcttca cactgagccc tctctgattc 240
ctccgtgttg tgatgtgatg ctggccacgt ttccaaacgg cagctccact gggccccctt 300

20

<210> 257

<211> 300

<212> DNA

<213> Homo sapiens ribosomal protein S5

25

<400> 257

cgccgagtga cagagacgct caggctgtgt tctcaggatg accgagtggg agacagcagc 60
 accagcgggtg gcagagaccc cagacatcaa gctctttggg aagtggagca ccgatgatgt 120
 gcagatcaat gacatttccc tgcaggatta cattgcagtg aaggagaagt atgccaagta 180
 5 cctccctcac agtgcagggc ggtatgccgc aaacgctttc cgcaaagctc agtgtcccat 240
 tgtggagcgc ctactaact ccatgatgat gcacggccgc aacaacggca agaagctcat 300

<210> 258

<211> 300

10 <212> DNA

<213> Homo sapiens diaphorase

<400> 258

tctatacaaa ttttcagaag gttattttct ttatcattgc taaactgatg acttaccatg 60
 15 ggatggggtc cagtcccatg accttggggt acaattgtaa acctagagtt ttatcaactt 120
 tggtgaacag ttttggcata atagtcaatt tctacttctg gaagtcattc cattccactg 180
 ttggtattat ataattcaag gagaatatga taaaacactg cctctttgtg gtgcattgaa 240
 agaagagatg agaaatgatg aaaagggtgc ctgaaaaatg ggagacagcc tcttacttgc 300

20 <210> 259

<211> 300

<212> DNA

<213> Human protocadherin

25 <400> 259

agtctcttgg gatcccctaa ccagagcctt ttgccatag ggctgcacac tggtaaate 60
 agtactgccc gtccagtcca agacacagat tcaccagge agactctcac ggtcttgatc 120
 aaagacaatg gggagccttc gctctccacc actgctaccc tcaactgtgtc agtaaccgag 180
 gactctcctg aagcccagagc cgagttcccc tctggctctg cccccggga gcagaaaaaa 240
 5 aatctcacct tttatctact tctttcccta atcctggttt ctgtgggggtt tgtggtcaca 300

<210> 260

<211> 80

<212> DNA

10 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide for making of pIC62.

15 <400> 260

catgtacatc acagtagtgc ttacacagggt ttccggcca taatggcctt tctgtgtgt 60
 gtgctacagc tagtcagtca 80

<210> 261

20 <211> 20

<212> DNA

<213> Artificial Sequence

<220>

25 <223> Designed chimeric oligonucleotide primer designated as

ICAN2."nucleotides 19 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides."

<400> 261

5 actgactagc thtagcacac

20

<210> 262

<211> 20

<212> DNA

10 <213> Artificial Sequence

<220>

15 <223> Designed chimeric oligonucleotide primer designated as ICAN6."nucleotides 19 to 20 are ribonucleotides-other nucleotides are deoxyribonucleotides."

<400> 262

acatcacagt agtcgttcac

20

20 <210> 263

<211> 20

<212> DNA

<213> Artificial Sequence

25 <220>

144/158

<223> Designed oligonucleotide primer designated as ICAN2 DNA."

<400> 263

actgactagc tgtagcacac

20

5

<210> 264

<211> 20

<212> DNA

<213> Artificial Sequence

10

<220>

<223> Designed oligonucleotide primer designated as ICAN6 DNA.

<400> 264

acatcacagt agtcgttcac

20

15

<210> 265

<211> 23

<212> DNA

<213> Artificial Sequence

20

<220>

<223> Designed oligonucleotide primer to amplify a portion of ribosomal protein S18-encoding sequence from mouse.

25

23

23

5

5

10

10

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10

15

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20

20

20

20

25

25

25

23

<211> 23

⟨213⟩ Artificial Sequence

 $\langle 220 \rangle$

<400> 268

23

<211> 23

<212> DNA

<213> Artificial Sequence

20 $\langle 220 \rangle$

<400> 269

23

<210> 270

<211> 23

<212> DNA

5 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of stromal cell derived factor 4 (Sdf4)-encoding sequence from mouse.

10

<400> 270

gaactcttca tgcacgttgc ggg

23

<210> 271

15

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

20

<223> Designed oligonucleotide primer to amplify a portion of cytoplasmic beta-actin encoding sequence from mouse.

<400> 271

tgatggtggg aatgggtcag aag

23

25

TOEAD-EEEEE60

<210> 272

<211> 23

<212> DNA

<213> Artificial Sequence

5

<220>

<223> Designed oligonucleotide primer to amplify a portion of
cytoplasmic beta-actin encoding sequence from mouse.

10

<400> 272

agaagcactt gcggtgcacg atg

23

<210> 273

<211> 23

15

<212> DNA

<213> Artificial Sequence

<220>

20

<223> Designed oligonucleotide primer to amplify a portion of
ornithine decarboxylase-encoding sequence from mouse.

<400> 273

gatgaaagtc gccagagcac atc

23

25

<210> 274

<213> Artificial Sequence

<223> Designed oligonucleotide primer to amplify a portion of ornithine decarboxylase-encoding sequence from mouse.

23

<212> DNA

 $\langle 220 \rangle$

20

23

25

<211> 23

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed oligonucleotide primer to amplify a portion of hypoxanthine guanine phosphoribosyl transferase (HPRT)-encoding sequence from mouse.

10 <400> 276

gtctggcctg tatccaacac ttc 23

<210> 277

<211> 23

15 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer to amplify a portion of tyrosine 3-monooxygenase encoding sequence from mouse.

<400> 277

atgagctggt gcagaaggcc aag 23

25 <210> 278

<211> 23

<212> DNA

<213> Artificial Sequence

5 <220>

<223> Designed oligonucleotide primer to amplify a portion of tyrosine
3-monooxygenase encoding sequence from mouse.

<400> 278

10 ttccctctct tctctgtt ctg

23

<210> 279

<211> 21

<212> DNA

15 <213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as MCS-F.

20 <400> 279

ccattcaggc tgcgcaatgt t

21

<210> 280

<211> 22

25 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as MCS-R

5

<400> 280

tggcacgaca ggtttcccga ct

22

<210> 281

10

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

15

<223> Designed chimeric oligonucleotide primer designated as MF2N3(24).

"nucleotides 22 to 24 are ribonucleotides-other nucleotides are deoxyribonucleotides."

<400> 281

20

gctgcaaggc gattaagttg ggua

24

<210> 282

<211> 24

<212> DNA

25

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer designated as MR1N3(24).

"nucleotides 22 to 24 are ribonucleotides-other nucleotides are
5 deoxyribonucleotides."

<400> 282

ctttatgctt ccggctcgta tguu

24

10 <210> 283

<211> 16

<212> DNA

<213> Artificial Sequence

15 <220>

<223> Designed chimeric oligonucleotide primer designated as MTIS2F-16
to amplify a portion of Mycobacterium tuberculosis DNA."nucleotides 14
to 16 are ribonucleotides-other nucleotides are deoxyribonucleotides."

20 <400> 283

tcgtccagcg ccgcuu

16

<210> 284

<211> 20

25 <212> DNA

$\langle 220 \rangle$

5

10

20

<211> 20

15

 $\langle 220 \rangle$

20

20

25

$\langle 211 \rangle$ 20

<212> DNA

<213> Artificial Sequence

<220>

5 <223> Designed oligonucleotide primer designated as MTIS-PCR-R-2 to
amplify a portion of Mycobacterium tuberculosis DNA.

<400> 286

cccaggatcc tgcgagcgta

20

<210> 287

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Designed oligonucleotide primer designated as SP6-HCV-F to
amplify a portion of HCV.

<400> 287

ccatttaggt gacactatag aatactgatg ggggcgacac tccac

45

<210> 288

<211> 45

<212> DNA

$\langle 220 \rangle$

<400> 288

10 <210> 289

<212> DNA

15 $\langle 220 \rangle$

20 $\langle 400 \rangle$ 289

<210> 290

<211> 20

25 <212> DNA

<213> Artificial Sequence

<220>

<223> Designed chimeric oligonucleotide primer designated as HCV-A A
 5 to amplify a portion of HCV. "nucleotides 18 to 20 are
 ribonucleotides-other nucleotides are deoxyribonucleotides."

<400> 290

gacccaacac tactcggcua